Bureau of State Laboratory Services
Office of Laboratory Licensure, Certification & Training

1740 W. Adams, Room 203
Phoenix, Arizona 85007
(602) 364-0720
(602) 364-0758 FAX
1-800-952-0374

JANE DEE HULL, GOVERNOR
CATHERINE R. EDEN, DIRECTOR

FAX TRANSMITTAL SHEET

DATE: October 10, 2002

TO: Laboratory Director and QA Manager

FROM: Wesley B. Press, Bureau Chief

Subject: **Information Update #77**

PAGES: 4 (including cover)

NOTE: If any of the pages are missing, please call 1-800-952-0374, (602) 364-0734 or (602) 364-0732.

THIS MESSAGE AVAILABLE IN ALTERNATIVE FORMAT UPON REQUEST, BY CONTACTING: Wesley Press AT (602) 542-0357.

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Phoenix, Arizona 85007
(602) 364-0720
(602) 364-0758 FAX
Technical Support Hot-Line 1-800-952-0374
E-mail: pachary@hs.state.az.us
http://www.hs.state.az.us/lab/license/tech/infoup.htm

JANE DEE HULL, GOVERNOR
CATHERINE R. EDEN, DIRECTOR

Information Update
October 10, 2002
Update #77

1. If a laboratory would like to perform the Selected Ion Monitoring (SIM) for specific compounds of EPA method 8260B (or 8270C) for the purposes of lowering the reporting limits, the following protocol must be met for the compliance analysis:

   - The GC/MS must be tuned with a full scan of 4-bromofluorobenzene (BFB) analysis that meet the 8260B requirements every twelve hours [or decafluorotriphenylphosphine (DFTPP) for 8270C].

   - Three or more characteristic ions must be monitored in each calibration standard, quality control samples and project samples using SIM scan for each compound of interest. Surrogate and internal standard must also be monitored using a minimum of three ions. This can be accomplished by setting up a method with a SIM programmable scan.

   - A five point initial calibration for each SIM compound and surrogate must be performed that meets the requirements of Method 8260B/8000B, as applicable [note that the Calibration Check Compounds (CCCs) and System Performance Check Compounds (SPCCs) are not required to be monitored unless they are SIM compounds].

   - A mid-concentration standard must meet acceptance criteria of Method 8260B/8000B, as applicable, for all internal standards, surrogates and SIM compounds (note that the CCCs and SPCCs are not required to be monitored unless they are SIM compounds).

   - Analytical batch quality control samples must consist of a method blank, a laboratory control sample, a matrix spike and a matrix spike duplicate (spiked with each compound of interest), which must meet the method specific acceptance criteria.

2. <u>EPA method 525.2</u>: Kay Dunlap and Dave Clift, chemists from the Bureau of State Laboratory Services, would like to share some valuable information that has been shown to increase the sensitivities of the EPA 525.2 method analytes. Their recommended changes are to:

   - Use a 0.25 um instead of a 0.5 um film thickness column.

- **Use an alternate criteria of the DFTPP tune, making mass 442 the base peak instead of 198, emphasizing large masses of the target compounds. The quantitation of certain compounds, for e.g., heptachlor on mass 272 and heptachlor epoxide on mass 353, are made using masses, which are less likely to be found in the background.**

- **Use an alternate source, which contains among other things a draw out plate with a larger aperture. A larger aperture is supposed to reduce the pressure inside the ionization chamber, consequently improving the linearity of calibration curves and also increasing signal/noise ratios.**

If you need additional information, Kay and Dave can be contacted at (602) 542-6116 or (602) 542-6108.

3. **Non-linear calibration models may be necessary for compounds and detectors that definitely do not show a linear response; unstable compounds or difficult detectors such as particle beam mass spectrometer. For the common analytes that have been previously shown to be linear, it is not the intent of the method to use a non-linear model. This has been confirmed by communications with the EPA programs.**

   To validate the use of non-linear calibration models, our office will review all the chemistry methods using non-linear models by the following protocol:

   - **Analyze at a minimum six calibration levels for organic methods.**

   - **Document the equation used for the calibration model, including all the coefficients, intercepts, coefficient of determination and the calculation used to quantify the concentrations.**

   - **Demonstrate that the detector has not been saturated by processing/ analyzing a narrower calibration range.**

   - **Verify that the compound has not been previously demonstrated as being linear during the initial instrument set up.**

4. **Standard Methods 9221F, in conjunction with SM 9221B and SM 9221C, has been approved for Arizona licensed laboratories for testing wastewater compliance samples for National Pollution Discharge Elimination System (NPDES) permits that specify *E.coli* as a required testing parameter.**

5. **We are sponsoring a <u>FREE</u> workshop on "GC and Chromatography" in Phoenix on November 6, 2002, from 8:00 AM - 3:00 PM. The presenter is Mr. Daren Decker, chromatography technical specialist, of Agilent Technologies. The topics covered are:**

   - **Introduction to GC**

   - **Choosing the "correct" GC column**

   - **GC care and maintenance**

   - **Trouble shooting common GC problems**

- Optimization of GC temperature program

The workshop is being held at the State Hospital, 2500 East Van Buren, Phoenix, AZ 85008, in room 405 at the Education Building.

Registration:

Please complete the registration form and fax it to the attention of David Winters or Prabha Acharya at (602) 364 – 0758. For questions, contact Prabha Acharya at (602) 364-0734 or David Winters at (602) 364-0732.

GC and Chromatography Workshop, November 6, 2002.

(Dr., Mr., Ms.,) First (M.I.) Last

Name:_____

Address:_____ **City:**_____ **State:**_____ **Zip:**_____

Employer Name:_____ **Position Title:**_____

Employer Address:_____ **City:**_____ **State:**_____ **Zip:**_____

Employer Phone Number: (_____**)**_____ **Fax Number: (**_____**)**_____

Registration must be received by: October 28, 2002.

6. If you have any questions regarding the Information Updates, or if you have any technical questions that need clarification, please call or send e-mail to Prabha Acharya, Program Manager, Technical Resources and Training, at the Laboratory Licensure numbers/address. Copies of the Information Updates can now be found at our internet address: http://www.hs.state.az.us/lab/license/tech/infoup.htm